NTS Educators ESE (Science) Jobs Test

Sr	Questions	Answers Choice
1	If the sum of the roots of $(a + 1)x^2 + (2a + 3)x + (3a + 4) = 0$ is -1, then product of the roots is	A. Commutative law w.r.t multiplication B. Associative law w.r.t addition C. Distributive law w.r.t addition D. Multiplication of a scalar with the matrix
2	In a school, there are 150 students. Out of these 80 students enrolled for mathematics class, 50 enrolled for English class, and 60 enrolled for Physics class. The student enrolled for English cannot attend any other class, but the students of mathematics and Physics can take two courses at a time. Find the number of students who have taken both physics and mathematics.	A. 40 B. 30 C. 50 D. 20
3	If A = $[a_{ij}]$ and b = $[b_{ij}]$ are the matrices of the order 3x3 then A-B=	A. Circle B. Ellipse C. Parabola D. Hexagon
4	Tan (π + Tan^{-1} x) =?	A. Tan x B. X C. -x D. Cot⁻¹ x
5	Which of the following is not defined?	A. Arcsin 1/9 B. ArcCos (-4/3) C. Arctan 11/12 D. Arccot (-4)
6	Which is in the solution set of 4x - 3y <2	A. (3,0) B. (4,1) C. (1,3) D. None
7	Given X, Y are any two sets such that number of elements in X=28, number of elements in set Y=28, and number of elements in set X∪Y=54, then number of elements in set X∩Y=	A. -7 + 2i B. 7 + 2i C. 7-2i D. √53
8	Sin 720° = _____	A. 1 B. 0 C. 2 D. 1/2
9	If C^n_r, P^n_r = 24:1 then r = ?	A. 1 B. 2 C. 3 D. 4
10	An m x n matrix is said to be rectangular if	A. Forms a group w.r.t. addition B. Non commutative group w.r.t. multiplication C. Forms a group w.r.t. multiplication D. Doesn't form a group
11	Domain of Y = csc x is	A. R - nπ, n ε I B. R C. R -nπ/2,nεI D. All negative Integers
12	d/dx ($3y^4$) =	A. 12y³ dy/dx B. 8y³ C. 8y³ dy/dx D. 12y³
13	If y = $(ax)^m + b^m$, then dy/dx equals	A. m (ax) ^m x^{m-1} B. ma^m x^{m-1} C. m a^m x^{m-1} D. m a^m x^{m-2}
		A. 1

14	If $\|A\| \neq 0$ then A is called	B. -1 C. ±1 D. 0
15	The range of inequality x + 2 > 4 is	A. (-1,2) B. (-2,2) C. (1,∞) D. None
16	There are 30 Red, 20 Green and some Blue bells in a bag if the probability of finding a Red ball is 1/3,how many are red balls in the bag	A. 120 B. 20 C. 40 D. 90
17	In the figure PS is perpendicular to QR, if PQ = PR 26 and P8 = 24,then QR=	A. 10 B. 20 C. 40 D. 26
18	Sin (2π -θ) =_____.	A. Cosθ B. -Sinθ C. -Sinθ D. -cosθ
19	The area of circle of unit radius=	A. 0 B. 1 C. 4 D. π
20	The value of x, and y, when $(x+iy)^2=5+4i$	A. X=2, y=-1 B. X=-2, y=1 C. X=2, y=-i D. X=2, y=2